An Evaluation of Telemedicine Opportunities

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The State of Connecticut Office of Health Strategy

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Introduction

The State of Connecticut's Health Information Technology Officer, Allan Hackney, tasked the University of Connecticut with an analysis of Telemedicine platforms. The review sought to understand each platform and their associated offering, specifications, integration capabilities, business plan and potential opportunities to engage with the State's Health Information Exchange (HIA Inc/ConnIE). Information was gathered through a landscape analysis, which consisted of web-based research, independent product testing, product demonstrations, and interviews with product representatives as well as with current customers. A set of research questions were developed by researchers with input and expertise from a practicing clinical informatician. Between April 2020 and June 2020, the team engaged in the landscape review, gathering data. In July 2020 a qualitative analysis of the collected data was completed. In July & August 2020 the UConn Health team also developed a telehealth survey for providers in the State. The goal of the survey was to better understand how rapid adoption of telehealth impacted providers, and their perceptions of its effect on practice, quality of care, and associated barriers. The results of these analyses are contained within this report. An examination of the collected data indicates that there are a variety of technology solutions that are viable options to partner with Connecticut's Health Information Exchange. Solutions run the gamut in terms of development and implementation cost and time, and accoutrements. Survey results indicate general consensus among responding providers regarding barriers to effective telehealth, and that regardless of practice size, more than half of providers generally felt that telehealth helped them deliver high quality care to their patients. Next steps pertaining to the landscape overview of technology options as well as survey results will be heavily dependent on the goals and vision for telemedicine in Connecticut as laid out by the HIE Board of Directors, as well as State Agencies and other stakeholders.

What is Telemedicine?

For the purpose of this exercise telemedicine is defined as the practice of providing synchronous clinical care to patients, using audio and visual tools, where the patient and provider are in separate locations. Medicaid defines telemedicine as "real time interactive communication between the patient, and the physician or practitioner at the distant site. This electronic communication means the use of interactive telecommunications equipment that includes, at a minimum, audio and video equipment."[1]

[1] https://www.medicaid.gov/medicaid/benefits/telemedicine/index.html

Background & Application

Telehealth services have been in use for decades in select areas of the country, generally those identified as rural or underserved, and more widely for certain services, including mental health. Some private insurers have covered specific telemedicine services for their beneficiaries, and providers in the State of Connecticut, including Yale New Haven Health have offered limited services via telehealth in the last several years. Some residents have also opted to pay out of pocket for services such as telemedicine "second opinion" programs. However, due to general limitations on coverage in Connecticut, including by Medicare & Medicaid, until the advent of Covid-19, it was not widely used in the State.

It is broadly recognized that telemedicine is valuable both in times of global health crisis, as faced now with the Covid-19 pandemic, and in ordinary periods. In the Spring of 2019 the Infections Disease Society of America, IDSA, published a position piece in support of Telemedicine to treat infectious disease. The purpose of the article was to educate infectious disease professionals, deliver context, discuss applications and considerations for use, and to promote the use of telehealth technology.2

The Covid-19 public health crisis in particular has created an opportunity for patients and providers to continue to participate in essential health care, while maintaining distance and preventing unnecessary contact. An incredible loosening of Federal Medicare and Medicaid regulations has led State Medicaid policy makers as well as private insurers to embrace reimbursement of telemedicine visits on par with their in-person counterparts. This has resulted in providers and systems scrambling to select and implement telemedicine solutions at a hectic pace.

At this point in time most large healthcare organizations, and smaller providers in the state have selected a solution to carry them through the current health crisis. However, we anticipate that once the dust settles providers and organizations will realize shortcomings and inadequacies in hastily selected systems, and that there will be an appetite for reevaluation and more thoughtful selection of better suited options. The outline of evaluated options that follows represents a sampling of telemedicine solutions available on the market today, and the opportunities that they present for the HIE.

[2] https://www.matrc.org/matrc-telehealth-resources-for-covid-19/

Evaluation of Select Telemedicine Options

	Active in CT	Integration Capability (API or Web Services)	Minimal Data Creation	Intermediate Data Creation	Standalone EHR	Interoperable Data	Exportable Data	Multi-Device Compatible	Stable Business Model	Opportunity to Engage
QliqSOFT	✓	✓		✓		✓	✓	✓	✓	✓
Doxy.me	✓							✓		
Zoom	✓	✓								
MyHelo				✓	✓	✓	✓	✓	✓	✓
CareConvene				✓			✓	✓	✓	✓
Hale Health	✓	✓	✓			✓	✓	✓	✓	✓
Doximity Dialer	✓	✓	✓				✓	✓	✓	✓
Zipnosis	✓	✓		✓		✓	✓	✓	✓	✓

Table 1: An Overview of Findings

QliqSoft

Current Customers

QliqSOFT is actively used within the Trinity New England Health System, with locations in Connecticut that include Saint Francis Hospital in Hartford, Johnson Memorial Hospital in Stafford Springs, Mount Sinai Rehabilitation Hospital in Hartford, and Saint Mary's Hospital in Waterbury.

Accessibility

Providers connect via a web portal, with optional EHR integration via FHIR or HL7. Patients connect via a link sent through email or text message.

Data Creation & Sharing

Data is created in the platform through the chat feature, images that patients can submit, and information gathered in forms. Data can be shared out of the platform via EHR integration, or through an API to the HIE.

Business Model

Customers include health care systems and organizations. They currently serve over 1,500 clients. QliqSOFT is founder funded and owned, they report that the business is stable, without plans to diverge from the current model.

Opportunity to Engage with the HIE

There is an opportunity for the HIE to either refer business or resell the product. There is potential to collaborate on co-building or co-designing, as well as developing a white label product, including desktop/mobile apps.

Document Share Capability
The current version does not allow for document sharing.

MyHelo
Current Customers
MyHelo currently serves 27 clients, covering 250,000 providers, including 3 physician owned hospitals. They are engaged with the State of Idaho HIE to provide telemedicine via a white label through the HIE. (Feedback from Idaho is pending.)

Accessibility
Providers connect via a web portal, or through their EHR if they use the MyHelo EHR system. Patients connect via a link sent through email.

Data Creation & Sharing
Data is created in the platform including patient demographics and encounter data, with the option to upload additional patient documents or information and personalize intake info. Data can be shared out of the platform via pdf or through an open API, which can interface directly with MyHelo (the spec is publicly available). MyHelo is not yet using the FHIR protocol but does have plans to.

Business Model
Customers include hospitals, practices and the Idaho State HIE. They currently serve over 250,000 providers. MyHelo is privately owned and debt free with cash reserves. They offer their EHR system and all components free of charge with the exception of the claims processing system and credit card processing, for which they charge fees. They report that 80% of clients use the entire system including paid modules, and 20% of clients use the free components.

Opportunity to Engage with the HIE
There is an opportunity to engage with MyHelo in an arrangement similar to that which they have employed with State of Idaho HIE. In that collaboration Idaho is facilitating sign up to the system, and MyHelo is providing initial training. Idaho has initially rolled out this service free of charge to support providers during Covid-19 but plans to charge a nominal a fee after the first six months for technical support. Idaho will pick up training and support once they understand the system. There is no cost to the State of Idaho HIE to engage with MyHelo, all sign-ups will be direct revenue.

Document Share Capability
The platform allows for document and record sharing, and also offers the capability to share screens and transfer files.

Care Convene
Current Customers
CareConvene has an arrangement with the MiHIN (Michigan Health Information Network) and has approximately 1,000 providers currently using the tool.

Accessibility
Providers connect via a web portal or app. Care Convene is working on integration with Epic and Athena Health, they are members of the App Orchard but do not have any products or integration available as of yet. Patients connect via a link sent through text message or via the app.

Data Creation & Sharing
Data is created in the platform through the chat, notes and encounter data which can be exported as a CCDA. They are developing a bi-directional interface for Epic & Athena that uses a single sign on, FHIR and HL7 compatible. In Michigan they have built out an ADT feed for providers.

Business Model
CareConvene target customers include providers, provider groups, health systems, HIE's. They also provide tools for long term care and chronic disease management. They operate on subscription plans, either charge per visit or per month. They have been operational for 6 years, the last three of which have been positive, they are a lean organization and are debt free.

Opportunity to Engage with the HIE
CareConvene has not participated in any revenue sharing opportunities to date. The MiHIN is a re-seller of the CareConvene product, they purchase "buckets" of subscriptions, with license to "sell" the product within the State of Michigan. CareConvene could engage in a similar opportunity with the Connecticut HIE.

Document Share Capability
The current version allows for the creation of a CCDA.

Hale Health
Current Customers
Hale Health is currently used by Griffin Health in Connecticut with locations in Derby, Shelton, Ansonia, Naugatuck, Southbury and Oxford.

Accessibility
Providers connect via a web portal, or though their EHR if using Athena or All Scripts, they have the capability to integrate with others, including Epic but Epic limits information uploads, so information is not shared in real-time. Patients connect via a link sent through text message or via an app.

Data Creation & Sharing
Data is only created when using the chat feature, no data is created through the video visit. Chat data can be shared via EHR integration, as a PDF, CCDA, or Hale can store the information for up to 7 years. Newest release coming July 2020 will feature a standalone telemedicine platform (currently telemedicine is only a piece of the expanded offering) which will feature screen share, and ability to save/share that data as well.

Business Model
The target clients are physicians, and physician groups. They currently serve over 20,000 clients. Hale has been profitable for the last two years; with no external capital all investments are directed into product enhancements.

Opportunity to Engage with the HIE
Options for Hale Health to engage with the HIE include acting as a reseller, where the HIE would markup existing services, the HIE could purchase licenses in bulk at a discounted rate, or white label the existing product. They offered discounts on the product for bulk purchases and the ability to be flexible.

Document Share Capability
Data resulting from messaging is the only information that can be shared, no additional data is created or can be shared.

Doximity Dialer
Current Customers
Doximity Dialer is a commonly used physician tool for contacting patients without sharing provider's personal phone numbers. They expanded into telemedicine; they currently host approximately 120,000 video calls per day nationally. It is estimated that this is already widely used by providers in CT.

Accessibility
Providers can connect via an app on a smartphone or tablet, and soon will be able to connect via a web portal; patients connect via a link sent through text message.

Data Creation & Sharing
Limited data is created, including the patient phone number, call time and duration. This is available to the provider within Doximity as a call log. Future enhancements may include generations of billing and coding data. This currently can be integrated with Epic via Haiku, and future EHR integrations are planned.

Business Model
The target clients are physicians and other clinicians, currently this service is free for providers with a Doximity account. Doximity generates revenue from advertisers who place ads, which are limited to the news feed section of the application. It's estimated that over 75% of providers access Doximity.

Opportunity to Engage with the HIE
Doximity could create an enterprise license for the HIE, which the HIE would purchase and then manage/sell licenses. Doximity is planning to launch an enhanced provider paid service in January 2021, these licenses would be for the enhanced service.

Document Share Capability
No data is created or shared on the current platform. This may change with the enterprise product that will launch in the near future.

Zoom
*Despite outreach attempts no contact was made with a representative, so limited information is available.
Current Customers
Zoom is in use at Hartford Healthcare & UConn Health.

Accessibility
Providers connect via their EHR, Zoom is available via Epic App. Patients must establish a patient portal account prior to participating in a Zoom visit and must access the visit through their patient portal, which is a web log in.

Data Creation & Sharing
If Zoom is integrated into the EHR it appears that providers have the ability to save visits for review, with a signed BAA.

Business Model
Unknown

Opportunity to Engage with the HIE
Unknown

Document Share Capability
Unknown

Doxy.me
*Despite outreach attempts no contact was made with a representative, so limited information is available.

Current Customers
Doxy.me has been used by Asylum Hill Family Medicine in Hartford, and it is estimated that this tool is used extensively by other providers in CT as it is a free service.

Accessibility
Providers connect via a web portal; patients connect via a link sent through text message.

Data Creation & Sharing
Limited data is created, including call time and duration, there are no patient identifiers. Providers can notate during the visit but must copy notes out prior to closing out the visit. Nothing will be saved, and no data can be exported.

Business Model
Doxy.me offer a free limited service, and an enhanced provider ($50/month per provider) and clinic level service for a fee.

Opportunity to Engage with the HIE
Unknown

Document Share Capability
Unknown

Zipnosis
Current Customers
Zipnosis is currently used in Connecticut as an offering at Trinity Health, with locations in Connecticut that include Saint Francis Hospital in Hartford, Johnson Memorial Hospital in Stafford Springs, Mount Sinai Rehabilitation Hospital in Hartford, and Saint Mary's Hospital in Waterbury. In total Zipnosis serves 52 health systems in 33 states.

Accessibility
Both patients and providers can connect via a web portal. Patients must create an account, and previously entered information can be populated at each visit. Providers can also connect through EHR integration.

Data Creation & Sharing

Zipnosis offers integration with electronic health records, and notes that they successfully interface with both Epic and Cerner, among others. Data that is created in the system is shared via HL7 feed or FHIR protocol in the form of a text file or a PDF.

Business Model

The target clients are generally health systems. Zipnosis offers patient initiated options for asynchronous care (minor acute and chronic conditions with algorithmic assistance in diagnosis), as well as synchronous video visits and chat. They have been operational in various market space since 2009. They charge an implementation fee as well as monthly fees to participants.

Opportunity to Engage with the HIE

The majority of their business is done with larger health systems, who white label the product. Further exploration is underway to identify opportunities for the HIE to engage with Zipnosis.

Document Share Capability

Text files and pdfs of notes are created within the system and shared back to provider EHRs through HL7 or FHIR protocols. Screen sharing, and document exchange outside of this does not appear to be possible.

Other Market Activities

Additional research was performed to determine the reach of major technology players into the healthcare space, including Apple, Google, and Amazon.

Apple

Apple currently promotes that they are involved in the healthcare space in a variety of ways.

- Hospital – Apple has collaborations with hospital systems including Geisinger & Ochsner where Apple technology and applications are utilized in providing patient care.[3]
- Home Care – A number of applications and the Apple Care kit facilitate patient self-monitoring and communication of patient collected information back to providers.
- Health Monitoring – Consumers have the ability to track their health information via personal connected devices such as the Apple watch, through scales, applications, and other self-monitoring devices.[4]
- Medical ID – Consumers have the ability to create an emergency Medical ID card that allows first responders to access critical information from the iPhone lock screen.
- Medical Records - Patients have the ability to pull and track their health information from over 500 participating healthcare institutions nationally. Patients can view a timeline and detailed information from their providers EHR including health history, labs, immunizations, and medications.
- Research Kit – The Research Kit can be used as a part of health research studies to enroll recruited participants, to collect consent documents, medical and patient reported information.[5]
- Facetime – Apple's Facetime application for video chatting is widely used by healthcare providers as a stop-gap tool for telemedicine visits under current circumstances. Federal guidance allows for the temporary use of such non-HIPAA compliant technologies during the Covid-19 pandemic. The likelihood of Facetime being recognized as a viable option beyond the pandemic is unlikely unless Apple pursues HIPAA compliance.

There is no evidence readily available to indicate that Apple is pursing formalized telemedicine at this time.

Google

Google is involved in a number of research programs around artificial intelligence and machine learning and hosts a number of public health data sets.

- Research – Current research projects in include studying the use of artificial intelligence to assist in diagnosing cancer, predicting patient outcomes, and preventing blindness. Additional research includes exploring ways to improve patient care, including tools, and partnerships with healthcare professionals. Google has developed a prototype unified health record that is currently in the trial phase and has completed a study on digitally enabled clinical care pathways.
- Data Sets – Google hosts a variety of public datasets for research, including the Covid-19 Community mobility report, and the Johns Hopkins Covid dataset.

[3] https://www.apple.com/healthcare/
[4] https://www.apple.com/ios/health/
[5] https://www.apple.com/ios/research-app/

- Verily – Verily is a member of the Alphabet portfolio, their focus is on building data infrastructure and tools to organize and understand information streams in the context of traditional healthcare data.
- Calico – Calico is also a member of the Alphabet portfolio (Alphabet is Google's parent company). They are a research and development company with a focus on harnessing advanced technologies to increase the understanding of the biology that controls lifespan. They plan to use the information gathered to devise interventions that enable people to lead longer and healthier lives.

There is no evidence readily available to indicate that Google is pursing formalized telemedicine at this time.

Amazon

Amazon has entered into the healthcare space through a variety of avenues. They are currently involved in offering their own healthcare plan add-on, Amazon Care, have pursued HIPAA certification for Alexa, and have partnerships with a variety of healthcare systems who use Amazon Web Services.[6]

- Amazon Care – Amazon has launched a pilot care plan for those with an Amazon insurance plan in select areas. The plan includes telemedicine service, chat service, visiting nurses, and prescription delivery.[7]
- Alexa – Amazon has pursued and obtained HIPAA compliance for Alexa, which was certified in 2019.
- Haven Health – It is reported that Amazon has around 1.2 million employees in Haven Health, the Amazon, JPMorgan, & Berkshire Hathaway partnership. The mission statement of Haven notes that the goal is to transform health care to create better outcomes and overall experience, as well as lower costs for patients.[8]
- Other Partnerships – Amazon has engaged with multiple healthcare systems and EHRs including, Boston-based Beth Israel Deaconess Medical Center to test AI tools, Cerner to act as their cloud service provider, Pittsburgh Health Data Alliance, and with other systems that utilize AWS

Amazon currently offers telemedicine to employees who participate in Amazon's health insurance program and who reside in select pilot areas.

[6] https://www.beckershospitalreview.com/healthcare-information-technology/15-things-to-know-about-amazon-s-healthcare-strategy-heading-into-2020.html
[7] https://amazon.care/about
[8] https://havenhealthcare.com

Opportunities

There is an array of opportunities for Connecticut's HIE to engage with telemedicine vendors to offer services to providers in the State in a revenue generating arrangement. Options for the HIE include acting as a reseller of one or more selected products, collaboration with one or more vendors to co-build, white labeling of existing products, purchasing bulk licenses for distribution, purchasing an enterprise license, acting as a referral service and serving as knowledge repository. Solutions currently on the market range in price from free to quite costly. Even with no cost options, there exists an opportunity for the HIE to serve as an intermediary and generate revenue from the distribution of licenses.

Acting as a reseller Connecticut could engage with the vendor(s) to either purchase bulk licenses or an enterprise license to use existing off the shelf the software, which would then be resold by the HIE to providers, groups, and health systems. Ideally, the HIE whether approaching via the bulk purchase or enterprise license route would negotiate a discount from the standard rate. In reselling licenses for use the HIE would have options to set the per license or user cost to generate revenue for the HIE. The HIE would have to negotiate whether the purchase would include tech support and training from the vendor, or would be provided by HIE personnel, or a contractor. Vendors may be willing to white label the technology in this scenario and brand the product(s) for the HIE.

Alternatively, the HIE could partner with vendors to modify existing systems, or even collaborate on designing and building products based on Connecticut specific requirements. This option could prove to be more costly and time consuming for the HIE but would allow the products to be specifically tailored to the Connecticut market and the needs of local providers.
The HIE may also opt to partner with multiple vendors and act as a referral service to providers. In this capacity providers, organizations, and health systems could look to the HIE for information on available products, select from a variety of vendors based on their needs, and in turn, the HIE would receive a referral fee from vendors.

Finally, Connecticut's HIE may opt to serve as a knowledge repository for the State. In this capacity the HIE, or a contractor, would collect information on various telemedicine solutions, and make the findings available to providers to aid in the selection process. In this scenario, the HIE could provide training and materials on best practices for selecting, implementing and applying telemedicine solutions. Connecticut's HIE also has the opportunity to provide consumer focused educational resources around telemedicine. Consumer resources could include topics around accessing and participating in telemedicine visits, best practices for consumers, prepping medications for visits, public service announcements, and topics that would benefit participants in Connecticut's Medicaid program.

The market for the services will depend on the vendor or vendors that the HIE chooses to engage with, as well as the opportunity, or combination of opportunities that the HIE elects to pursue. Some options, by virtue of their visibility to providers may draw significantly more interest. For example, Doximity is already well known in the provider community, as a verified network of healthcare professionals, as well as through a widely used application offered for providers to contact patients through a proxy phone number. Providers may more readily adopt technology when presented through a company that has standing in the healthcare community. Alternatively, providers who have had negative experiences with free versions of software options may be unwilling to consider a purchased version, even if it offers significant upgrades. The best choice, or choices, for Connecticut will depend on the goals of the Board, as well as the revenue model.

Considerations

Resources

There is a wealth of resources available through the National Consortium of Telehealth Resource Centers and regional affiliates as well as from the Federal Department of Health and Human Services, particularly through the Office of the National Coordinator and most recently the Centers for Disease Control and Prevention.[9,10]

The Connecticut Health Information Exchange would benefit by leveraging the existing abundance of resources, modified to address Connecticut's specific needs, to develop and implement a Statewide telehealth program. If Connecticut's HIE elects to pursue telemedicine, additional considerations, outside of the technical qualifications of vendors include:

- *Clinical Model: What kind of care will the solution support, will there be any recommended limitations?*
- *Business Model: Will there be sustained changes to reimbursement? What, if any are the lability considerations?*
- *Technology & Confidentiality: How will the systems interact with the HIE?*

Current State

The majority of providers, provider groups, and health systems have implemented some form of telemedicine at this time. However, many of these solutions were hastily chosen, and sub-optimally implemented. As healthcare settles into the new reality of telemedicine it is generally expected that many will re-evaluate their original choices and may look to the market for more intuitive and less burdensome systems. Additionally, many independent and small provider groups are taking advantage of temporary solutions such as Facetime, What's App, WebEx, Zoom (free), and other stop-gap solutions. While these technologies are allowing providers to survive in the current atmosphere, they are not effective long-term solutions. Additionally, these technologies will fall out of compliance once Federal emergency orders end. These providers, along with many who have purchased ineffective systems will face the inability to thrive with subpar telemedicine solutions. Patient perspective should also play a role in platform selection. As patients experience telemedicine from various providers, they may become more vocal about preferences and ease of use. Some systems, such as Zoom through Epic requires patients to first create a user account and access their visits through a patient portal. Accessing additional systems, setting up accounts, and recalling passwords may be a hindrance that patients will not be willing to accept. This may be especially true after patients have engaged with alternatives that provide for one click visits launched via a text message link. As patients and providers settle into telemedicine visits as routine, the HIE could be well poised to offer aid and demonstrate immediate value by serving as a resource in this arena.

Usability

A chief consideration for selection and implementation of a telemedicine technology must be an assessment of usability. To confirm that the benefits of the technology are realized, in telehealth systems, or any technology, usability should be omnipresent from the decision-making process, through to implementation. The Agency for Healthcare Research and Quality (AHRQ) and the National Institute of Standards and

[9] https://www.telehealthresourcecenter.org/resource-documents/
[10] https://www.matrc.org/matrc-telehealth-resources-for-covid-19/

Technology (NIST) together have emphasized the need for and importance of establishing a method to measure and improve Health Information Technology.

NIST has published the following definition of usability noting that it should represent "effectiveness, efficiency and satisfaction with which intended users can achieve their tasks in the intended context of product use."[11] Usability considerations should be applied to both the provider and patient experience for telemedicine to ensure that solutions drive, and do not detract from effective, efficient, safe, and timely access to healthcare.[12],[13],[14]

Financial

Each of the telemedicine solutions identified in this evaluation present an opportunity for the HIE to engage in a revenue generation partnership. However, the initial outlay of costs varies greatly. Some options are currently available at no cost, including basic versions of Doxy.me and Doximity Dialer, and the full version of MyHelo. In terms of other platforms, or for enhanced versions of some free offerings, there can be significant costs associated with implementation as well as ongoing fees. It is recommended that the financial costs of each option be weighed against usability, opportunity to engage and ease of implementation.

Legislation

On March 6, Congress passed the Coronavirus Preparedness and Response Supplemental Appropriations Act.[15] This piece of legislation allowed providers to bill Medicare for patient care delivered via telehealth during the current public health crisis. This legislation also allowed for the Department of Health and Human Services to waive or modify certain existing telehealth requirements. CMS provided additional framework to the new rules including the enhanced flexibility in the delivery of telemedicine, regardless of service location, originating site, and suspending the established relationship rule. Services that are furnished to patients through telemedicine, using both audio and video connection are paid at rates on par with in-office visits.[16]

On December 1, 2020 CMS unveiled a final rule which includes expanded telehealth coverage. The final rule permanently opens telehealth to about 60 new provider services, including Group Psychotherapy, Psychological and Neuropsychological Testing, and Cognitive Assessment and Care Planning Services. Additional "Category 3" services have been included on a temporary basis, through the end of the calendar year when the pandemic ends and include services such as Physical and Occupational Therapy.
Other changes include increased frequency for nursing facility visits via telehealth, from once every 30 days to once every 14 days. CMS also allows for an expanded the list of care providers able to be reimbursed for telehealth, including clinical social workers, clinical psychologists, and speech language pathologists. The addition of new billing codes enables eligible provider types to bill for virtual check-ins and remote evaluation. CMS has also noted that telehealth rules don't apply if the provider and patient are in the same location, even if the provider is using telecommunications equipment to monitor a patient. Finally, the new rules expand remote patient monitoring, with caveats once the public health crisis ends.

In Connecticut, where the already short legislative session was truncated by Covid-19, no bills regarding telemedicine were in the regular legislative session. However, a working draft of a bill, LCO 3614, was raised for consideration in the 2020 Special legislative session. On July 31, 2020, Governor Lamont

[11] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3649667/
[12] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4985278/
[13] https://pubmed.ncbi.nlm.nih.gov/27435948/
[14] https://pubmed.ncbi.nlm.nih.gov/31156110/
[15] https://www.congress.gov/bill/116th-congress/house-bill/6074/text?q=%7B%22search%22%3A%5B%22Coronavirus+Preparedness+and+Response+Supplemental+Appropriations+Act%22%5D%7D&r=1&s=1
[16] https://www.cms.gov/newsroom/fact-sheets/medicare-telemedicine-health-care-provider-fact-sheet

signed HB 6001: "An Act Concerning Telehealth," temporarily modifying insurance and other requirements for the delivery of telehealth services. The Act codified into statute several measures that the Governor issued through executive orders to expand telehealth services during the Covid-19 public health crisis. The legislation makes temporary changes applicable to telehealth, extending provisions through March 15, 2021, and allowed for an expansion of the types of providers eligible to engage in telehealth, authorizing 31 provider types to provide services.

The Act also allowed any eligible provider types to provision services in Connecticut regardless of whether they held a valid Connecticut license on the conditions that the provider (1) is licensed or certified in another state or territory of the United States; (2) is authorized to practice telehealth under any relevant order issued by the Department of Public Health and (3) maintains professional liability insurance that satisfies Connecticut regulation. The Act includes several other provisions around delivery, consent, reimbursement, and coverage, with a final provision that awards extensive power to the Commissioner of the Department of Public Health to waive, adjust or suspend any regulatory requirements as deemed necessary to reduce the spread of Covid-19 and to protect the public health.

Due to Covid-19 Connecticut's Department of Social Services (DSS), administrator of the State's Medicaid program, loosened telemedicine restrictions in line with federal guidance and has released multiple Provider Bulletins on the subject, which are used to convey policy changes and updates for services. Beginning March 13, 2020 DSS expanded telemedicine reimbursement and has continued to relax requirements and include additional services, locations, and provider types, with new allowances as recently as June. Connecticut Medicaid has also eliminated requirements around established patients and is reimbursing telemedicine visits (consisting of both audio *and* video) at the "in person" rate. Connecticut has also expanded coverage of telephone visits, which are reimbursed at audio only rates.[17]

In Connecticut, and across the country alliances and collaborations have formed to lobby for permanent telehealth coverage and expansion. One such group, active in pockets across the country, is the Alliance for Connected Care. They are currently meeting with providers and systems across Connecticut, New York, and New Jersey in an effort to allow for telehealth care and reimbursement across state-lines. The group seeks to permanently facilitate access to care is by allowing providers and patients to connect with each other regardless of their physical location and have joined with large retailers including Wal-Mart and Amazon. The plan includes the development of Medical Excellence Zones, which consist of "an area defined by multiple state borders where medical practitioners may practice across state lines." They propose that practitioners licensed and in good standing with one state in the Zone, may practice across state lines. The group is in talks with a collection of states in the western US, the Delaware, Maryland, Virginia region, as well as the tri-state area. Keeping these activities on the radar of leadership will ensure the ability to collaborate, where desired and appropriate, and keep abreast of movements that may detract from state priorities.

Nationally, there is a push to retain the loosened restrictions on reimbursement for telemedicine services. In mid-June the Senate Committee on Health, Education, Labor and Pensions conducted a hearing on telehealth lessons learned during the pandemic. This testimony contained overwhelming support for expanding telemedicine coverage in the post-Covid world and ensuring reimbursement parity. Joseph C. Kvedar, MD and President, the American Telemedicine Association (ATA) noted at this hearing that " Over these past few months, Members of Congress, regulators, patients, and providers across the country have witnessed a reality that the ATA, its members, and I have known for decades: telehealth works. … Telehealth has not been merely a novelty; telehealth has kept the entire healthcare system afloat and has

[17] Complete details on Connecticut Medicaid policy updates can be found in Provider Bulletins: pb20-09, pb20-10, pb20-14, pb20-23, pb20-24, pb20-25, pb20-28, & pb20-38, and can be read at ctdssmap.com

enabled patients to continue to receive care."[18] At this same hearing Karen Rheuban, MD and Director of the Center for Telehealth at the University of Virginia noted that "Significant barriers to the broader integration of telemedicine services into everyday healthcare remain. More than 16 different federal agencies report engagement in telehealth, … However, despite of our multi-billion-dollar federal investment in telemedicine and broadband expansion, those good faith efforts remain stifled by 20th century federal and state barriers to widespread adoption and a lack of alignment across the payers."[19]

Actions in late June 2020 in both the Senate and House call for expansion of Telemedicine services beyond the current pandemic. The Advancing Telehealth Beyond Covid-19 Act, was introduced in the US house of Representatives and calls for making permanent the telehealth regulations introduced in the CARES Act. A vocal supporter of this bill is the Connected Health Initiative (CHI), whose members include American Medical Association, Apple, Bose Corporation, Boston Children's Hospital, George Washington University Hospital, Intel Corporation, Microsoft, Novo Nordisk, United Health Group, the University of California-Davis, the University of Mississippi Medical Center (UMMC) Center for Telehealth, the University of New Orleans, and the University of Virginia Center for Telehealth. In the Senate bi-partisan legislation has been raised to expand telehealth opportunities, and separately 30 senators from both sides of the aisle are urging the Majority & Minority leaders to make permanent previously passed legislation from the CONNECT for Health Act, which was included in Covid-19 legislation.[20], [21]

On July 20th, Dr. Andrey Ostrovsky, the former United States Chief Medical Officer for Medicaid released an article calling for legislation to address permanent expansion of telehealth coverage. Dr. Ostrovsky's appeal for action noted that the expiration of the 1135 waivers, which allow for telemedicine flexibility per the Presidents declaration of a public health emergency (PHE), will have the most substantial adverse effects on the most vulnerable populations: the poor and the elderly, as well as minority populations. Upon the expiration of the national PHE declaration the associated waiver flexibilities will expire for Medicare and Medicaid beneficiaries, but it is unlikely that private insurers will drastically reduce or eliminate coverage for telemedicine services for their own recipients. This is in part due to recent significant investment into telehealth. Dr. Ostrovsky notes the ballooning outlay into digital health in the last quarter, the highest funded period in the history of the industry with investments reaching $3.1 billion.[22]

[18] https://www.help.senate.gov/imo/media/doc/Kvedar.pdf
[19] https://www.help.senate.gov/imo/media/doc/Rheuban.pdf
[20] https://www.schatz.senate.gov/imo/media/doc/Letter%20to%20leadership_CONNECT%20for%20Health%20Act_06.12.20.pdf
[21] https://www.fiercehealthcare.com/tech/senators-call-for-permanent-changes-to-expand-telehealth-access-post-pandemic
[22] https://www.mobihealthnews.com/news/looming-end-telehealth-boom

Telehealth Survey

In July and August 2020 UConn Health developed and deployed a telehealth survey for a range of providers in the State of Connecticut. The survey sought to understand the experiences, challenges, barriers, and benefits of the increased use of telemedicine for healthcare providers in the state of Connecticut. The aims of the survey included:

1. *To capture and describe telemedicine platforms in use, to enumerate the frequency of telemedicine visits before and during Covid-19, and to identify provider satisfaction with telemedicine delivery and with their current telemedicine tool.*

2. *To identify barriers and challenges commonly faced by healthcare providers using telemedicine to dispense adequate patient care.*

3. *To determine whether there is interest of healthcare providers to have a telehealth solution made available through the CT HIE and to elicit desired features for such a platform.*

Survey Design

This survey was designed to obtain information about provider demographic characteristics, prior and current experience with telemedicine, and features that may be desirable in a telehealth platform delivered via the CT Health Information Exchange (HIE), as described in the aims. The survey was submitted to and received approval as an exempt project from the UConn Health IRB. The survey was delivered online through Qualtrics Survey Software and distributed to contacts within a variety of healthcare systems to achieve a representative sample of healthcare providers in the state of Connecticut. A variety of providers, from diverse settings completed the survey, garnering 416 responses, which are broken down by provider type in *Figure 1*. Further detail on the study design can be found in Appendix D, and further detail on the survey can be found in Appendix E.

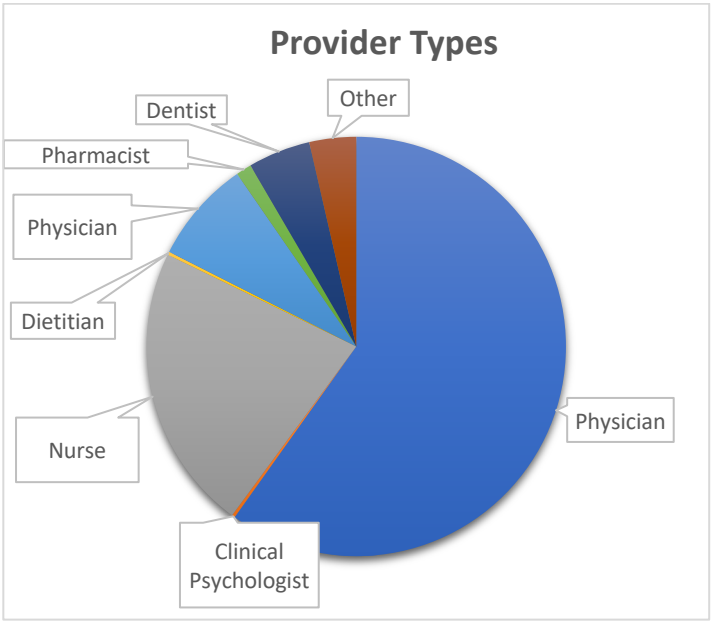

Figure 1: Responding Provider Types

Survey Results

Clinic Volume

Survey data indicates that small and medium sized practices (less than 20 providers) were disproportionately affected by Covid-19. These practices reported a significantly higher impact and were more likely to have a major reduction in overall clinical volume than large outpatient practices (more than 20 providers). In examining the impact of telehealth technologies in combatting the loss of clinic volume, both small to medium sized and larger outpatient practices reported an improvement in overall clinical volume. Large outpatient practices saw greater improvement, with 28% reporting a 51-100% improvement in regaining lost volume, whereas 22% of small to medium outpatient practices reported a 51-100% improvement.

Billing & Reimbursement

In June 2020 Health Affairs released a study on the waning primary care practice revenue across the country as a result of Covid-19. The study estimated that primary care practices would lose approximately $15 billion as a result of dramatic declines in office visits and reimbursements. This amount works out to about $65,000 in revenue per full-time physician, with agreement that even those high losses could increase if further lock down orders were issued, or if payers revert to lower reimbursement rates for telehealth services. The study notes that "For many primary care practices, particularly those serving the most vulnerable populations, these losses could be catastrophic, with many practices being forced to close" and that current crisis "could weaken the US health system dramatically at a time when we need it to be at its strongest."[23]

While providers were able to rapidly implement a telehealth service model, enabling them to engage in remote visits with their patients, the pandemic still resulted in substantial revenue loss to providers that may produce in sustained difficulties for practices. While this survey was not designed to fully capture the financial impact on all practices, some discernable observations can be made. Overall, 42% of respondents reported "no improvement" or slight improvement, up to 10% in return to pre-Covid reimbursement levels. About 25% of providers reported slightly better improvement in return to pre-Covid reimbursement, with improvement from "11-25%". Only 11% of respondents reported returns of 75% or more to pre-Covid reimbursement levels. In evaluating responses on the ability of practices to return to pre-Covid reimbursement levels, large outpatient practices reported higher improvement in return to pre- Covid monthly billing and reimbursement, with 25.6% of large practices reporting between "51-100% improvement" (12.8% reporting 51-75% improvement, 12.8% reporting greater than 75% improvement) and only 10% reporting "no improvement". Responses among small to medium outpatient practices showed slightly less impact on improvement, with 14% reporting "51-100% improvement" (3.1% reporting 51-75% improvement, 11.2% reporting greater than 75% improvement) and 14% reporting "no improvement". It is crucial to note that these responses reveal that while some providers have achieved improvement in these ranges, full recovery is rare, with fewer than 12% of respondents reported greater than 75% return to pre-Covid reimbursement levels. This leaves the other 88% or respondents with losses of 25% of greater to their practices in the aftermath of Covid, even with telemedicine to help stem losses. This persistent level of loss is not sustainable for practices and is a potential area for consideration of interventions to aid flagging practices.

Quality of Care

Of those sampled, over 50% of respondents either agreed or strongly agreed that telehealth is helping deliver high-quality care to their patients. The ability of telehealth to help deliver high-quality care to holds

[23] https://www.healthaffairs.org/doi/pdf/10.1377/hlthaff.2020.00794

regardless of practice size, with more than 53% of small-to-medium, and over 52% of large outpatient practices associating telehealth with high quality care.

While recognizing the value of telehealth in contributing to high quality care, providers were not convinced that the care they provide via telehealth is on par with in office visits. Approximately half or respondents disagreed that telemedicine allows them to provide the same or better quality of care as office visits.

Barriers

There is a general consensus among providers, regardless of practice size around the barriers associated with success in telehealth. Patient technology issues, including access to reliable internet connection and to devices ranked as the top barrier identified by providers, followed by reimbursement issues, low patient engagement and lack of implementation support. Providers overwhelmingly identified patient access to reliable internet and devices as the most common barrier, as illustrated in *Figure 2,* with more than 70% reporting this barrier. This was found to be true regardless of practice size or setting. Steps that can be considered to overcome this most prevalent barrier are outlined in the following "Opportunities" section.

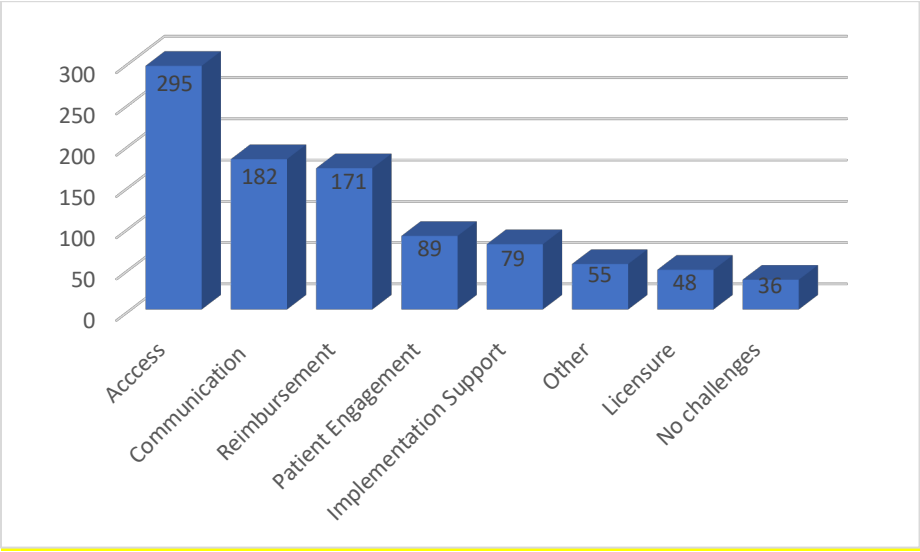

Figure 2: Provider Identified Barriers to Telemedicine
Representing 416 responding providers with the ability to select up to 3 barriers.

A full report on the Telehealth Survey and results will be published within the next quarter.

Potential Opportunities to Address Most Common Barriers

The results of the telehealth survey, particularly the responses around barriers reveal opportunities for intervention and development to improve the state of telehealth in Connecticut. Based on gaps identified in the provider survey there are prospects to improve patient access to technology, improve provider to patient communication, provide implementation support and technical assistance, and resolve reimbursement ambiguities and obstacles.

Patient technology issues, including access to devices and reliable wireless internet was cited as the most commonly perceived barrier by providers in the State. With over 70% of those polled identifying this as an issue, there is a clear opportunity to act to improve access to reliable internet and devices as a means to overcoming this barrier. This could be addressed by seeking funding to provide wireless hotspots or municipal Wi-Fi, connect patients to resources that may already exist in their area, provide patient focused outreach and education around use of telemedicine technology, offer technical assistance programs, and through collaborating with existing School Based Health Programs.

Communication was the second most commonly cited barrier to telehealth, with 44% of providers reporting difficulty establishing rapport and interpreting nonverbal cues with their patients. This barrier could be addressed by seeking funding for the development and delivery of outreach to and education opportunities for providers. Efforts could include the curation and/or development of best practices in telemedicine delivery, which could be shared with providers through webinars, recorded videos, print materials, or other digital means. Simultaneously, these activities could open avenues of communication for providers to address another top barrier, lack of implementation support. Engaging providers on both best practices and technical assistance in one outreach could make prudent use of resources and prove more valuable/appealing to providers.

An additional opportunity to improve communication between providers and their patients during remote visits exists around telehealth interpretation services, since engaging interpretation services during a telehealth visit can be more challenging. In order to ease the burden associated with language interpretation in a telehealth environment, there should be consideration given to how to engage these services within telehealth solutions in a rapid, easily implemented manner, with a low cost to providers.

Reimbursement was the third most commonly cited barrier by. Legislation and policy efforts combined with a communication campaign aimed at providers could aid in resolving this barrier. Efforts to make state, private and medicated reimbursement policy changes permanent to allow for the continued use of telemedicine visits and ensure continued parity in reimbursement for telehealth visits have the potential to ease this burden. Engaging providers through a communication campaign to clarify policy and billing complexities is also likely to eliminate unnecessary hurdles associated with telemedicine. These activities could be especially beneficial to smaller practices where fewer resources are available

Finally, in January 2021 evaluation and management codes will be changing substantially for providers. While the use of telehealth has made it harder to meet the current criteria, the newer codes represent simplified documentation and may offer an opportunity for more stable reimbursement. This change presents an opportunity for outreach and education to providers on what documentation needs will be, what impact this could have on their practice. This change also presents and occasion to engage with payers around the new codes and ensuring understanding and appropriate reimbursement.

Next Steps

UConn Health has continued to evaluate the needs, barriers, and challenges associated with telemedicine's practical implementation within Connecticut. As such, the group completed the process of interviewing key stakeholders, and deployed a telemedicine survey. The goal of these activities is to further examine the current state of telemedicine in Connecticut and identify possible avenues for the State to progress in this area.

Based on the current market, legislation, and environmental factors it is recommended that the State of Connecticut, its health care organizations and non-profit HIE consider developing both a long term and short-term business plan for telemedicine in Connecticut.

In the development of a short-term model the following steps are respectfully recommended for consideration:

- Evaluate vendor opportunities
  - Identify and select an easy lift, no cost or low-cost solution(s) to offer
  - Consider usability
- Consider the development of a short-term financial model
  - Evaluate revenue sharing/generating model
- Develop an operational plan
- Develop a knowledge repository around telemedicine
  - Curate and develop resources for providers and consumers
- Develop an education and outreach strategy

It is also recommended that the HIE consider the development of a long-term model for telemedicine in Connecticut. As telemedicine evolves the HIE may wish to consider whether alternative long-term solutions are required and identify if an appetite and market exist to pursue such solutions. The HIE may also consider developing a long-term financial model aligned with the changing landscape, and in consideration of ongoing operations.

In the development of a longer-term model the HIE may wish to consider the applicability of MMIS funding in building out telemedicine solutions. If planned development of telemedicine solutions, integrated into the health information exchange, will demonstrably benefit Medicaid recipients and providers in the State, they should be evaluated for potential eligibility for 90% Federal, 10% State funding for their design, development and implementation, and further eligibility for 75% federal financial participation (FFP) for ongoing operations.

The overwhelming popularity of telemedicine, intensified lobbying at the National level, calls for legislation within the House and Senate, recognition of its value, and acceptance of the necessity to modernize federal regulations, all lend to an acknowledgement that the increased utilization of telemedicine practice will outlive the current health crisis. This presents an opportunity for Connecticut's Health Information Exchange to facilitate providers in the State in engaging with high quality telemedicine services, that may also be financially beneficial to the HIE. As providers reevaluate their initial selections the HIE could be poised to step in and offer valuable guidance and solutions to the providers of Connecticut.

Finally, leadership should consider that any activities pursued around telehealth will likely offer returns beyond Covid-19. Over 72% of providers polled in the telehealth survey expect to maintain or increase their current level of telehealth use into next year. With the uptick of Covid-19, it is probable that over the

winter months the continued use of telehealth will remain essential. Recent activities on the national stage, and across the states indicate permanent expansions of telehealth are on the horizon.

Appendix

Appendix A: Interview Notes

Product	• Is there information to share from the platform?	· How is information shared? o How could data be shared in an HIE?	• Is data created? o Stored? o Shared? o Transferred?	• What is the tech in the platform?	• What is the business model? o Who pays? o Who is the target client? • What is the cash flow?	• What are the options to engage? o Is there a revenue sharing opportunity?	Could the standard business model impede data sharing?					
QliqSOFT	Yes, chat & images; Data from the "bot" collection can be collected in a form that can be output as discrete data	You can have data go into EHR. via integration Could share into the HIE via an API	Yes, via chats, forms,	In app orchard process, will be using an API to connect to the selected EHR. , will be done based on EHR. Hosting in Rack space as of now, will be transitioning	1500 clients, Founder funded & owner, stable	Could refer business or resell the product; potential to collaborate on co-building or co-designing. White labeling as well for desktop/mobile apps.	Developing Med Adherence apps, have a Med Rec bot - *** set up a separate call on the Med Rec chat bot. Will send some docs over					
Doxy.me												
Zoom												
MyHelo	yes, demographics and encounter data is created MD logs as well - names DOB, visit timing, option to upload more information - option to personalize	if using stand alone telemedicine no additional	can PDF info, open API can interface with MyHelo - spec is published - it's MU compliant, not using FHIR yet. Open API so can transfer data INTO if switching from another EHR. Get data from intake, etc. Patients can upload documents as well - also serves as a PHR.	MU Compliant open API, will progress to FHIR Hosted locally with triple redundancy *** Lee to send more details on how	free EMR, telemed scheduling, inventory, etc. FEES: credit card processing, claiming to insurance or payment. Not anticipating any changes to model. Percent of clients who use paid services: 80% use entire system and PAY, 20% use free modules. Current user base: 250 physicians, within 27 clients, including 3 hospital locations. Privately owned, debt free, reserve	Telemed: Idaho is facilitating sign up MyHelo trains; Idaho charges a fee ($10/month per facility) for technical support. Idaho will pick up training and support once they understand the system.	Once practice is engaged with HIE, so all patient data can be shared within the HIE. Only considerations might be state restrictions					
CareConvene	working on remoted patient monitoring. Yes - see notes on CCDA, encounter data,	working on integration with Epic & Athena, Epic in App Orchard, Athena similar. Use FHIR & HL7 and have a bi-directional interact, single sign on	Members of App orchard but have not published yet, integration into MHIN in Michigan, extract either CCDA or have an ADT feed. ADT notifications in browser tool, and a provider app. Send ADT feeds to providers. Active Care Relationship File (ACR) ~ active patient panel, based on agreements they capture pertinent patient data for office that wants to use it. Patient name phone discharge reason, ADT type, disposition , facility, could have parent health record information - optional for patient, picture uploads, SOAP notes , chat text and start & stop times		Have been in business 6 years, strong usage in last 3, in the past year large uptick in usage by providers and visit numbers. Almost 1000 providers are engaged as of now. Team of 11 employees, growth is based on revenue, lean business model, debt free company, revenue from visits. Remote operating company, no office. Jeffrey Van Wingen, Joy Politsy. Plan: Working towards remote patient monitoring, working with BlueCross & Blue Shield on monitoring of elderly on hospital grade devices, an RN/home health aid will have to facilitate on behalf of the patient. Working on Coumadin monitoring with a cardiology office.	Business Model: The target is the provider, provider groups/health systems, HIE, also provide tools for LLC management, Chronic Disease management. How is it monetized? Subscription plans: $6 per visit fee as entry level, next level (larger office/higher volume) is per provider/per month fee on a sliding scale based on numbers (generally less than $50/provider/month with a 12 month commitment). Bill qualified health providers, but MAs schedulers can be added free of charge since they do not bill; finally is enterprise license for health systems buy buckets of visits can be split across all providers in the system (i.e. buy 1000 visits and use as needed) no providers are excluded. OPPORTUNITY: Not engaged in any kind of revenue sharing opportunities yet, would have to consider. Don't have a model in mind at the moment. Relationship with MHIN & Velatura: MHIN has a reseller agreement, they can resell platform in Michigan, could engage as a re-seller in CT. Ties to MHIN or Velatura? Velatura has no stake in CareConvene, no financial benefit to Velatura if we engage with Care Convene.		Patient can access via application or a text invite, available to providers outside of Docs - RNs, MAs	Markets: In Michigan, Texas & Florida, in primary care, specialists, independent and health systems, as well as the HIE. Starting to launch with Texas HIE.	Offer for a test account for Tom		
Hale Health	Data pushed is only for messaging. For video visits no data is created.	FOR MESSAGING ONLY: automatically export data to EHRs that it's integrated with. Otherwise store patient data for up to 7 years for a patient access per HIPAA. Data sent to EHR. as a PDF CCDA. Single document that is updated on an ongoing basis when there is new activity for the patient. Identified as separate encounters.		Use Amazon Web Services as back end system. Scheduling and visits in platform, can integrate with Athena & all scripts and can prepopulate information with those EHRs. Can integrate with others, but it's not instantaneous. Will have screen share available in the newest version. Did have one down day when organization tried to sync 1.4 million patients into platform, had to modify platform, was not ready to accommodate that scale at the time and mass uploads are no longer an option. Have bolstered all back end systems of product since advent of COVID	20,000+ physician groups - over 100,000 patients - resource for providers, create tools for providers. Launching a newer version of standalone telemed platform for video visits at $19/provider/month. Current solution has questionnaires, ability to send photo & video, triage, etc. at a $59/provider/month. Likely NEWEST release is going to happen the end of June/early July. Financing/Cash Flow: profitable for 2 years, no external capital. Currently investments are all into product enhancements.	Could act as a re-seller, where would be a markup on existing services, could do a contract where the HIE buys a set number of licenses, Option to white label this product that would require management of the licenses (likely not our best option) but can explore, could do quantity discounts, can be flexible		Offer quick link to launch on mobile browser. Can integrate remote monitoring devices, with access. mhealth is most common. That can be exported to the EHR. on a set basis is not instantaneous because it's so fluid. ** Will send information to us on full functionality, video, and a demo account.				
Doximity Dialer	Only store - patient phone number, call time and call duration. No plan at this time to add anything beyond this. Anticipate- potential future state could be coding/billing from the app	Potential in ENTERPRISE version to have access beyond the current which is only available not to the provider as a call log.		AWS SHOP - USE WEB RTC - standard web video protocol. launching beta desktop application -** They will send Tom an invite	CURRENT MODEL: Advertising revenue. Partner organizations pay to put content on Doximity (IE CT Children's advertises to communicate with CT doctors). Venture packed cash flow positive for 5 plus years. Anticipate selling/changing business model- not anticipated. Physician first model, so unlikely they would change drastically. 120,000 videos per day - call failure rate is less than 2% - NEW within 6/8 weeks. Committed to keeping it FREE until at least January 2021. THEN there will be basic dialer function and enterprise version that will be paid subscription model	Working to establish an enterprise version; ability to execute a BAA is hampered by not having an entity-wide agreement. Opportunity: Could create an Enterprise License for HIE, HIE would manage. POTENTIAL: collaborate/ partner with HIE and HIE could hep to lower per provider cost. ** Will send pricing ideas, they would be excited to engage and engage in a revenue sharing opportunity.		Have verified identity 80% or providers in the US. Have secure messaging capability. Can do up to 4 participants per call. Can integrate with EPIC via Haiku. Adding scheduling capability, PRE WORK: MA/RN/etc. can start the call and then add dr. Ability to remind pt. via a call. Adding ability to add a translator via audio only connection. Enterprise VERSION is emerging. Care team can engage in this as well ** Wil send Tom workflow for care team. Advertising only takes place on the newsfeed.				
US Living Will Registry - NOW Advance Care Registry	Yes - all kinds of documents related to. They ensure that all docs uploaded adhere to state requirements. PDF Docs. ALSO minimum required fields for clients to fill out. Are now storing video files for Maryland	Free standing database. Can partition from national registry to only those enrolled in the state.		Seamless transaction between EHR. and registry, single sign on, opens in a new window Once authenticated against network, a passthrough allows access to registry documents, without having to do a separate log in. A hyperlink to patient information is provided. Documents are updated via the WEB only, not in the EHR, link is always to most recent version of the document. Currently using Web Services. Store in rack space with third party, use redundant platforms	For profit operation, fully staffed, patented software, provide back end support to all client. Each client choses the document types (financial power of attorney or last will and testament are NOT allowed). Try to stay in advance directive space. Next STEPS for Business: want to keep private clients like independent autonomy of independent third party running the system. Keep $ in escrow so business will continue	Have relationships with Vermont & Virginia as such: Virginia is the state HIE they most recently worked with, established their registry using their system. In Vermont the state dept of public health sponsors it for the state. Can add in neighboring state provider organizations. Can have a link from the HIE for people to register ~ not noticeable that they have navigated to a new page. VA pays a few per registrant per month. VT - gets paid as a state administrator and pay for registry via contract. Could docs be queried through the HIE? Would that be retrievable? DAILY send Virginia a report with links to the HIE a report of changes (new, removed, died, opt out etc.). Also goes to HIE services side. Psych ADs with New Jersey - maintain AD for psych patients, working on dementia advance care plan patients make point in time care decisions. RESELL OPTIONS: Annual license fee: storage, software reporting, etc. Yr 1 - $10,000 set up fee; $45,000 / year ongoing fee with support included (increase for users up to 25,000) and a one time registrant charge of $3 per user. Flexibility on options		Retail Website: $60 to create an account in the registry & allows ability to upload docs including MOLST & POLST, advance directives, organ donation, etc. They review all docs uploaded to ensure they meet requirements of the state within 48 hours. Then a registration letter is generated and sent to registrant, including a peel off wallet ID card that includes unique registration # with provider access information on the back of the card. Hospital/Health System:	Goal is the storage and access/ability to access documents - not just the creation of documents	100% online platform generally state HIE's or State Dept of health's sponsor for state, health systems and hospitals also subscribe to the services. They pay for the access to the registry for their patients, hospice centers, law firms elder care generally sponsor use for patients. Have an app EMS services		
Vynca	Yes - it's a repository for AD docs, there is guidance and structure to completion process. Can scan in paper documents. Is telehealth compatible (?) Education materials are also included. Reporting & analytics?	Access: Bare bones is a HIPAA compliant web portal for providers. Patient access is also available in full access version, or limited access version. OPTIONS: Web Portal access with no integration with HIE branding and HIE admin rights; Can integrate into EHR, opioid registries HIE - In Louisiana & Delaware in planning stage but NOT yet done;	Members of AppOrchard but have not published yet, integration into MHIN in Michigan, extract either CCDA or have an ADT feed. ADT notifications in browser tool, and a provider app. Send ADT feeds to providers. Active Care Relationship File (ACR) ~ active patient panel, based on agreements they capture pertinent patient data for office that wants to use it. Patient name phone discharge reason, ADT type, disposition , facility, could have parent health record information - optional for patient, picture uploads, SOAP notes , chat text and start & stop times	There is a repository, EHR. integration is possible, part of foundational build in Epic, have an API app with Cerner. Single sign on into platform with notifications around Ads, using clinical context aware system built into EPIC. In the context of HIE.	Not a direct to consumer; Client is Health care systems, state registries, hospice, insurance, etc. they deploy to their patients. * will share numbers. Corporate structure: privately owned, 2-3 major partners, investors are in post-acute world, 6 years old company, present in 15 states does not see dis-banding or selling, positive growth, CEO is a practicing physician	Contracts are generally 2-3 years. Could use a portal or have Vynca integrated in the EHR, White label approach start with Portal and then integration with HIE. Qualidigm could provide wrap around services to support use, train-the-trainer model. Phase 1 - web portal: $50 -$150 per year; To integrate into HIE: would be 2-3x Web portal cost; Phase 3 - health systems integration into their own systems.	***WHAT IS THE COMMUNITY HEALTH RECORD???	How could this be successful in the HIE? Lower cost, low threshold/barrier to entry? How could we get there/what's the approach?	Integration Option with HIE: would need to match patients (Tom notes would happen on HIE side),	CPT codes on advance care planning, can track times spent on care planning and bill for it	What do they do currently for patients who leave the state to be able to look up: wallet card, email patient access to patient account from physician. That patient would have access to documents & can share access to view with friends/family. This is via a patient portal ONLY;	Can they link to an existing repository solution? Flexibility - could do a document exchange, when they bring on new client they do backload existing documents
My Directives	Yes	Integration: Cerner & Epic Application, Integration with HIEs, automated invite functionality with EHR. integration . If deploying app, the integration is in place, displays within context. HIE's may have portals for providers, or in-context dashboards that ping the system and displays on provider side. Web Services for third parties - if generating advance care planning docs can be stored in registry & repository. Recently deployed web services to allow for push of MOLST/POLST docs created in the healthcare setting (either paper or e-docs) . Can track all access, including QR code scans, logs of patient access, logs of Doc access, logs of proxy access, etc. all tracked and store in the system. System agnostic	Can create docs, or upload/store other created docs from other systems. Dashboard and docs types are fully customizable, can offer what we want, select from different doc types, add more etc. Uploaded docs, filled in docs, video, images. API Interfaces at health care provider level, EHR integration is an option, have some matching (look for DOB, etc.) . Can include/create encounter notes which can be used for billing ~ system is tracing activity and duration, can report out estimates on how many accounts may have been eligible for CPT billing (generally 65 and older is eligible for CPT billing) . Education content is available in system, can integrate third party content either from us to other partners/resources. Can be embedded and directed to specific parties (I.e.. consumers, facilitator, physician, etc.)		My Directives is completely free for the consumer. Paid by payers to help put people on the system tore the data and get monthly subscription fees from hospitals who touch the system. Are re-sold through Cerner. Pay for system member to engage on a per member per month basis. Monthly subscription for payers. Jeff is CEO and co founder, in business since 2007, privately held and never raised any capital, held by co-founders. No plans for selling/acquisition, plan to be around for the long haul.	Do have existing relationships with HIEs across country. Started out as consumer facing but have pivoted over last couple years. Looking to get around data silos, uses a cloud registry option. Can engage via a facilitated advance care planning through the HIE - to help them get to more doctors, HIE gets paid a fee when providers sign up to participate. GOAL: Scale global confidence that people have a voice in their care. OPTIONS: Charge Member hospitals/organizations/payers & purchase a per member per month program, we provide education, access capacity through HIE, could collaborate with bulk loading of already existing docs. PREFERENCE: If payers at the table, tell payers (via governor, etc.) to encourage clients to add/create/update advance care plans & payers pay AD Vault (no cost to HIE), payers mostly take on the burden. As facilitated conversations are going on for updates, because a basic doc is already done. PM/PM is cheapest at 10c/month, to upload plan, get event notifications, payers DO NOT HAVE ACCESS TO WHAT PLAN SAYS. Best option is		AD Vault is parent company. Launched first consumer facing product in 2011, offering digital advance care planning services. Consumer clients in 50 states & 58 countries. Launched in eHealth Exchange ~ have a mobile app for users	Focused past 2 years on building provider facing system			
Zipnosis	integrated into the HER, do collect patient information in triage	integration, integrates with Epic, Cerner, has bi directional information flow - could be sent to HIE via HL7, Smart on FHIR	Yes, a standard free text note, as a pdf or a text file depending on health system. Not structured data - diagnosis codes, scripts, codes	asynchronous care and synchronous care with video & chat - asynchronous protocols, clinical quality committee to add clinical protocols. Web based platform, amazon web services, all customers get own space * will send more information	Around since 2009, originally a DOC player, 2015 began targeting health's systems, establishing provider networks to use product with their patients. One time implementation fee to configure and then a monthly subscription & utilization fees. COSTS: Dependent on implementation details, usually about 60K and then monthly flat fee 12k-20k monthly based on number of providers and usage. Ability to take payments from patients, or have option to integrate with insurance for eligibility checking.	Potential to white label the product for needs, potential to buy bulk license Guarantee 60 day onboarding from signature						

Appendix B: Sample CT Medicaid Provider Bulletin

Connecticut Medical Assistance Program | Provider Bulletin 2020-09
Policy Transmittal 2020-07 | March 2020

Deidre S. Gifford, MD, MPH, Commissioner

Effective Date: March 13, 2020
Contact: Contact Person: see below

TO: **All Providers**

RE: **New Coverage of Specified Telemedicine Services Under the Connecticut Medical Assistance Program (CMAP)**

Effective for dates of service March 13, 2020 and forward, in accordance with section 17b-245e of the 2020 supplement to the Connecticut General Statutes, the Department of Social Services (DSS or Department) will implement full coverage of specified synchronized telemedicine, which is defined as an audio and video telecommunication system with real-time communication between the patient and practitioner. The coverage of specified synchronized telemedicine services will be covered under both Connecticut's Medicaid Program and Children's Health Insurance Program (CHIP).

The Commissioner of the Department has determined in accordance with that statute referenced above that all of the telemedicine services listed in this bulletin as covered under CMAP "are (1) clinically appropriate to be provided by means of telemedicine, (2) cost effective for the state, and (3) likely to expand access to medically necessary services where there is a clinical need for those services to be provided by telehealth or for Medicaid members for whom accessing appropriate health care services poses an undue hardship." Therefore, in accordance with that statute, telemedicine services are fully covered under this bulletin as described herein "notwithstanding any provision of the regulations of Connecticut state agencies that would otherwise prohibit coverage of telehealth services."

All other requirements applicable to these services remain in effect. Therefore, the following telemedicine services are covered under CMAP only when they:

- Are medically necessary, in accordance with the statutory definition of medical necessity in section 17b-259b of the Connecticut General Statutes;
- Are rendered via a HIPAA-compliant, real time audio and video communication system (but note that certain popular video chatting software programs are not HIPAA-compliant); and
- Comply with all CMAP requirements that would otherwise apply to the same service performed face-to-face (in-person), including, but not limited to, enrollment, scope of practice, licensure, documentation, and other applicable requirements.

Providers: Please review this entire bulletin carefully as there are many important details that apply to this new coverage.

Please refer to **Addendum A** – **"Definitions"** attached to this bulletin for a list of applicable telemedicine definitions.

Please refer to **Table 1 - "Approved Procedure Codes for Telehealth Services**" attached to this bulletin for a list of permissible services.

BEHAVIORAL HEALTH SERVICES

The following behavioral health services may be rendered via telemedicine:

1. **Psychotherapy Services**

   The following individual psychotherapy, family psychotherapy, and psychotherapy with medication management services may be rendered via telemedicine:

Appendix C: An Act Concerning Telehealth

OLR Bill Analysis
HB 6001
Emergency Certification

AN ACT CONCERNING TELEHEALTH.

SUMMARY:

This bill modifies requirements for the delivery of telehealth services and insurance coverage of these services until March 15, 2021. Among other things, it:

1. expands the health providers authorized to provide telehealth services;
2. allows certain telehealth providers to provide telehealth services using audio-only telephone, which current law prohibits;
3. allows telehealth providers to use additional information and communication technologies in accordance with federal requirements (e.g., certain third-party video communication applications, such as Apple Facetime);
4. establishes requirements for telehealth providers seeking payment from uninsured or underinsured patients;
5. requires insurance coverage for telehealth services and prohibits providers reimbursed for services from seeking payment from an insured patient beyond cost sharing; and
6. prohibits (a) insurance policies from excluding coverage for a telehealth platform selected by an in-network provider and (b) carriers from reducing reimbursement to a provider because services are provided through telehealth instead of in-person.

Additionally, the bill modifies requirements for pharmacies

Appendix D: Telehealth Survey Protocol

Version 1 20Jul2020

PROTOCOL

Title: Transition to Telehealth: Experiences of Connecticut Healthcare Providers Utilizing Telemedicine during the COVID-19 Pandemic

Background:

The novel coronavirus (COVID-19) represents an enormous challenge for the US and global healthcare systems. The first case of COVID-19 in the U.S. was reported in January 2020, and the first confirmed case in the state of Connecticut was March 8, 2020.[1] Since then, Connecticut reached a peak in cases and hospitalizations in mid-April 2020.[2] The state's case numbers continue to plateau while other areas of the country are now dealing with massive outbreaks.

Healthcare systems in areas with the largest outbreaks have had their limits tested with regard to capacity, staffing, and availability of vital resources. Amidst these challenges, providers in all sectors of the healthcare system quickly adopted telemedicine programs to meet the needs of their patients while aiding in social distancing efforts. Both private insurers and the Centers for Medicare and Medicaid Services (CMS) rapidly adjusted their standards for reimbursement in response to the pandemic, relaxing restrictions and providing guidance to make telemedicine more accessible for patients.[3] By reducing in-person visits, healthcare systems have helped to slow the transmission of coronavirus while keeping front-line workers safer and conserving resources.

Prior to COVID-19, the use of telemedicine to conduct patient visits was available, but not widely used despite widespread uptake of other digital health technologies. Prior research has shown that majority of patients and providers have positive experiences with telehealth in multiple healthcare settings and medical specialties.[4] That said, patients and providers alike often experience technological difficulties and providers particularly cite inability to complete full examinations as a barrier to successful telehealth visits.[5] Since COVID-19 rapidly made telemedicine a necessity, it has become obvious that while imperfect, telemedicine is feasible, acceptable, and accessible to patients and providers in a variety of settings, and patients with a variety of conditions can be safely triaged via telemedicine without compromising quality of care.[6] The technological infrastructure and capabilities for its deployment largely exist, though there is a need and desire for integration of telemedicine platforms within the electronic health record. While this technology exists, its use and implementation is not universal among healthcare systems utilizing telemedicine.[7]

It is clear that virtual patient visits are going to be part of the new norm, for the duration of the pandemic and beyond, playing a major role first in the initial response to COVID hospitalizations and now more so in continued outpatient care as we move into a post-pandemic reality.[8] Many medical organizations, including the American Medical Association, have responded by rapidly producing guidebooks and recommendations for implementing and assessing virtual healthcare.[9] However, we are still learning about providers and patients experiences and barriers amidst the rapid and widespread deployment of telemedicine.

Appendix E: A Snapshot of the Telehealth Survey Questions

Reflects Questions 1& 2 out of 69 Total Questions

Telehealth Survey

I: Information Sheet, Agreement, Eligibility Screening

[Display information sheet] By completing the survey, you understand and acknowledge that you are providing consent and that you agree to the above statements and are voluntarily entering this study. Select and click Next if you agree to participate.

Screening:

i. Are you a healthcare provider currently seeing patients in the state of Connecticut?
    1. Yes
    2. No → if no – Sorry, you do not qualify to participate in this study. Thank you for your interest.

ii. Since the start of the COVID-19 pandemic, have you conducted any patient visits via telemedicine (i.e., virtual patient encounters conducted in real time via audiovisual platform or by telephone/audio only)?
    1. Yes
    2. No → if no – complete Demographics block and then questions 66-68

II: Demographics

1. What type of provider are you?
    a. Physician (MD, DO)
    b. Nurse Practitioner (APRN, NP)
    c. Physician Assistant (PA)
    d. Pharmacist
    e. Dentist
    f. Clinical Psychologist
    g. Licensed Clinical Social Worker
    h. Dietitian
    i. Other: _____
2. (IF answer to 1 is a, b, or c): What is your area of practice?
    a. Primary care
    b. Hospital medicine
    c. Internal Medicine subspecialty (e.g. cardiology, gastroenterology)
        i. If c selected: Specify: _____
    d. Emergency Medicine
    e. Pediatrics – primary care
    f. Pediatrics – subspecialty
        i. If e selected: Specify: _____
    g. Surgery or Surgical Specialty
    h. Psychiatry
    i. Other: _____
3. In which setting(s) do you practice? (select all that apply)
    a. Hospital inpatient